

ABSTRACT

Toroidal internal combustion engine comprising two concentric engine rings. Intake valves are assembled in two faces of one set of pistons and exhaust valves in two faces of the second set of pistons. The intake-valve pistons are fixedly attached to one of the engine rings and the exhaust-valve pistons to the other engine ring. The face of one intake-valve piston and the face of one adjacent exhaust-valve piston form boundaries of an engine chamber. Combustion forces on the piston faces force the two concentric engine rings to counter-rotate. The intake-valve piston and the adjacent exhaust-valve piston sweep the same chamber volume at different strokes of the engine cycle. The engine is constructed of CRC material and mounted on a central shaft, with the intake manifold and the exhaust manifold mounted on each side of the engine, providing a lightweight, self-lubricating, highly fuel efficient, and dynamically balanced engine.